

REMARKS

Reconsideration of this application, as amended, is requested.

Claims 1, 3-8, 10 and 11 remain in the application. Claims 2 and 9 have been canceled. Claim 1 has been amended to incorporate the limitations of claim 2 and to define the invention more clearly. Claim 6 has been amended to incorporate the limitations of claim 9 and to define the invention more clearly. All of the remaining claims have been amended to eliminate the numeric references. Reference numerals are not required under U.S. patent law and are given no patentable weight. Accordingly, the amendment to eliminate the numeric references is not a narrowing amendment and is not an amendment entered for purposes of patentability.

Claims 1, 2, 6-9 and 11 were rejected under 35 USC 102(b) as being anticipated by Takahashi, U.S. Patent No. 4,676,580. Claims 3-5 and 10 were rejected under 35 USC 103(a) as being obvious over Takahashi in view of Schwindt et al. The Examiner concluded that Takahashi shows a coupled terminal unit with coupling portions that are extendable in an arranging direction of the terminal fittings to alter the arrangement pitch of the terminal fittings. With respect to claims 3 and 5-10, the Examiner acknowledged that Takahashi does not show terminal fittings joined to one another at intermediate positions. However, the Examiner relied upon the Schwindt et al. patent for showing terminal fittings joined to one another at intermediate portions. The Examiner concluded that it would be obvious to combine Takahashi and Schwindt et al. and that the originally claimed invention would be obvious in view of the hypothetical combination.

The manufacture of a terminal fitting typically starts with a thin generally planar conductive plate. The plate is advanced sequentially through a progressive die

apparatus that cuts the plate to remove metal and to define a selected planar shape. The dies for stamp forming the conductive plate move substantially perpendicular to the plane of the plate, and hence substantially perpendicular to the arrangement direction of the terminal fittings along the plate. A portion of the conductive plate remains attached to the terminal fittings for moving the terminal fittings through the die and for advancing the terminal fittings to a location where the terminal fittings can be inserted into a housing. This portion of the conductive sheet that remains attached to the terminal fittings generally is referred to as a coupling portion or carrier strip. The spacing of the terminal fittings on the carrier strip should conform to the spacing between the insertion holes in the housing. Portions of the conductive sheet between terminal fittings and adjacent to the carrier strip are removed as scrap. This scrap can be recycled, but there are significant cost penalties associated with the recycling. Thus, there are advantages to reducing the amount of scrap.

The Takahashi reference acknowledges that certain efficiencies can be achieved by stamping terminal fittings at one pitch and then expanding the pitch between the terminal fittings for insertion into a connector housing. For this purpose, Takahashi provides V-shaped connections 16, 17 extending between adjacent terminal fittings 12. The V-shaped connections are orientated so that apices of the V-shaped connections extend in opposite directions and so that the ends of the V-shaped connections are connected to one another. The apices of these V-shaped connections are effectively flattened to increase the pitch between the terminal fittings. The V-shaped connections 16 and 17 and the terminal fittings 12 of Takahashi all lie in the same plane as the initial conductive plate from which the terminal fittings 12 are stamped. Thus, Takahashi

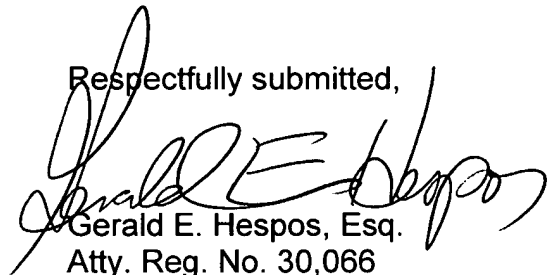
requires that the coupled terminal unit be presented to a tool that can squeeze the V-shaped connections 16 and 17 towards one another and in the plane of the conductive plate from which a coupled terminal unit is formed. The Examiner will appreciate that the terminal fittings of this type are very small and that the conductive plate material is very thin. Hence, it would be extremely complicated to deform the Takahashi coupled terminal unit from the FIG. 2 orientation to the FIG. 3 orientation. Takahashi provides no suggestion of how this process could be carried out particularly in situations where the conductive plate is thin and the terminal fittings are small.

In contrast to Takahashi, the coupled terminal unit of amended claim 1 has a plurality of terminal fittings coupled by at least one coupling portion so that the terminal fittings are substantially parallel and in a common plane. The coupling portion defined by amended claim 1 "is formed into a wavy shape extending out of the plane of the terminal fitting and is extendible in an arranging direction of the terminal fittings of the coupled terminal unit." This extension of the coupling portion from the wavy shape into a less wavy or flat shape can be achieved by dies that can move perpendicular to the plane of the conductive plate from which the coupled terminal unit is formed. Thus, the dies for extending the coupling portion in the arranging direction move in the same direction as the dies for cutting the conductive plate into the required shape or for severing the coupling portion from the terminal fittings after the terminal fittings have been inserted into the terminal insertion holes of the connector housing. Takahashi has absolutely no suggestion of a coupling portion formed into a wavy shape extending out of the plane of the terminal fittings.

Method claim 6 has been amended to incorporate similar limitations set forth in a method form. In particular, method claim 6 recites the step of forming the conductive plate to define coupling portions "formed into a wavy shape extending in the thickness direction" and then "at least partly flattening the coupling portions for extending the coupling portions in an arranging direction of the terminal fittings" to increase the pitch between the terminal fittings. It is submitted that Takahashi has no suggestion of the coupled terminal unit defined by amended claim 1 and its dependent claims 3-5 or the method defined by amended independent claim 6 and its dependent claims, 7, 8, 10 and 11. Nothing in the Schwindt et al. reference overcomes these deficiencies of Takahashi.

In view of the preceding amendments and remarks, it is submitted that the claims remaining in the application are directed to patentable subject matter and allowance is solicited. The Examiner is urged to contact applicants attorney at the number below to expedite the prosecution of this application.

Respectfully submitted,



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